

REMARKS CONCERNING THE AMENDMENTS

The above amendments have been made in an effort to more clearly define the present invention and to address issues raised in the office action. The additional limitations are intended to limit the claims only as the language provides and is not intended to limit equivalents that are not specifically excluded by the language of the amendments.

Antecedent basis for the amendments may be found generally in the specification and in original claims. For example, the dimension limitations of the liner may be found in original claims 16 and 17. Cutting of the labels prior to association with the liner is found generally in specification, page 20, lines 3-19. Printing of the labels prior to cutting is shown on page 25, lines 21-29.

Claim 5 has been cancelled as redundant in view of the amendment to claim 1 adding the limitation of 0.0032mm, and the dependency of claims dependent from claim 5 has been changed to reflect the cancellation of claim 5.

The Examiner is hereby authorized to cancel claims 11-17, as directed towards a non-elected invention upon allowance of the remaining claims in this Application.

SUMMARY OF OFFICE ACTION

1. A restriction requirement has been memorialized in the Office Action. Applicants have confirmed the original election.
2. An objection to Figure 1 has been made. Applicants submit herewith a Drawing Correction in response to that objection.
3. Claim 18 has been objected to as containing an incomplete phrase.
4. Claims 7, 9 and 12 have been rejected under 35 USC 112, second paragraph as being indefinite. It is asserted that there are a multiple number of references to a liner that appear to be incompatible.
5. Claims 1-4 and 7-9 have been rejected under 35 USC 103 as unpatentable over WO/00/07883 (Schumann), Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621).
6. Claims 5, 6 and 10 have been rejected under 35 USC 103 as unpatentable over WO/00/07883 (Schumann), in view of WO 00/30963, Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621) (as applied directly above) when further considered with Muschelewicz et al.
7. Claims 1-4 and 7-19 have been rejected under the Judicially-Created Doctrine of Obviousness-Type Double Patenting over claims 1-3 of U.S. Patent No. 6,294,038. in view of WO/00/07883 (Schumann), WO 00/30963, Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621).
8. Claims 5, 6 and 10 have been rejected under the Judicially-Created Doctrine of Obviousness-Type Double Patenting over claims 1-3 of U.S. Patent No. 6,294,038, in view of WO/00/07883 (Schumann), in view of WO 00/30963, Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621) when further considered with Muschelewicz et al.

Applicants would like to thank Examiner Mayes for the opportunity to have an Examiner's Interview at the PTO on 9 December 2004 and the courtesy extended to Applicants at that time. A formal Examiner's Interview Summary Sheet was prepared at that meeting. No formal agreements were reached.

RESPONSE TO THE ISSUES RAISED IN THE OFFICE ACTION AND
ARGUMENTS AGAINST THE REJECTIONS

1. A restriction requirement has been memorialized in the Office Action.

Applicants have confirmed the original election.

Applicants have fully responded to and confirmed the restriction requirement in this response.

2. An objection to Figure 1 has been made.

Applicants submit herewith a Drawing Correction in response to that objection.

That issue is moot.

3. Claim 18 has been objected to as containing an incomplete phrase.

Claim 18 has been amended above to remove that issue.

4. Claims 7, 9 and 12 have been rejected under 35 USC 112, second paragraph as being indefinite. It is asserted that there are a multiple number of references to a liner that appear to be incompatible.

These claims have been amended to remove the ambiguity.

5. Claims 1-4 and 7-9 have been rejected under 35 USC 103 as unpatentable over WO/00/07883 (Advanced label), WO 00/30963 (Loehmann), Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621).

This rejection is respectfully traversed.

The present invention as claimed precuts the label, and then applies the label to the carrier sheet. This is done in two ways that solve the problem and neither of these ways are taught in the prior art of record. In claims 1-10, a linerless label material is used. The linerless label does not ordinarily require a label, and for that reason, suffers from an additional problem, the need for special application machinery (see specification). By precutting the label, maintaining the stability of the cut label to the matrix (the surrounding material),

and then applying the stable precut linerless label to a substrate carrier, the linerless label material on a carrier can be applied to substrates with conventional label application apparatus. In addition, the precutting of the label allows its application to an ultrathin label that is of lower cost than normal label liner. Absent the precutting of the label, the liner tends to wrinkle or be cut while attached to the label. This damage can cause machinery breakdown, jamming and other delays. The method of this invention therefore solves multiple problems faced in the prior art and provides a high quality low cost product.

In the second method (claim 20) label material is first printed, adhesive applied, then cut (leaving microbridges to stabilize the label to the matrix), and then laminated to a carrier sheet. Again, this is distinct, novel, and unobvious technical advance over the showing of the combination of references. By cutting the label before the application of the label material to the carrier, a more precise cut of the label can be assured without any potential damage to the carrier layer. Additionally, the microbridging is sufficient to stabilize the label-matrix sheet, yet enable it to be used in a conventional label applicator. The label applied from this system will not have rough edges because the microbridges tear cleanly and do not leave a rough edge (see specification).

None of the references of record suggest the use of ultrathin liners in combination with machine-applied labels. None of the references recognize the problems associated with the use of ultrathin liners with machine-applied labels. None of the references suggest the specific combination of steps that are taught by Applicants and recited in the claims for practicing a solution to that problem. Applicants have clearly established an inventive and unobvious step.

The system of the invention therefore addresses multiple problems and solves multiple problems by practicing a system and method that is novelty and not obvious from the teachings of the references.

The printing industry and particularly the label aspects of the printing industry are extremely cost-conscious. Pressure is regularly placed on printers to lower their competitive bids to win marginally profitable contracts. Bid differences of a fraction of a percent are extremely important. Using the method of the invention, the cost of manufacture (by reduction of material costs in the

liner) can be reduced by as much as 5%. The label printer using this technology could easily cut costs to the customer by 2-3%, putting himself in a very competitive situation, while at the same time increasing his profit margin by 3-2% because of the reduced costs. The technical advantage of being able to finally use ultrathin liner materials is extremely important to the industry. No one else, including major suppliers, coaters and label manufacturers have been able to achieve this success. The method and the results are novel, a technical advance, and display an inventive step. The problem was to reduce costs without altering existing label stock and without reducing product quality. Only Applicants by the claimed process have been able to accomplish this.

This recitation of thickness is quite important for a number of technical standpoints. First, the use of such a thin liner layer saves significant amount of material costs and reduces pollution of the environment by using less discardable material. The use of such ultrathin liner creates significant problems, however. Within a broad range of technical areas, the only known use of such thin liner is on roofing shingles where the liner is hand stripped from the shingle before application. The shingles are rough, uneven materials where the presence of wrinkles is insignificant, and from which the liner is hand peeled.

In the application of labels to surfaces by automated apparatus, it is essential that surfaces and combinations of layers provide uniform thicknesses and the absence of wrinkles. This capability has never been before provided on linerless label stock. There are multiple reasons that Applicants have discovered why the problem exists and why the present combination of steps enables a solution to the problems. Because the liner is so thin, it is highly flexible, subject to wrinkling, and does not provide physical support to the label. Additionally, thin liners are substantially weaker than industry standard liners and tend to break on standard label applicators when used with traditional cutting means (where labels are cut while attached to liners). D6 faced this problem with the label itself, and artificially used individual "thin" layers by combining multiple layers (e.g., the stiffening layers and then adhesively securing the stiffened polymer layers) to provide a label material that could be used. No recognition of the use of thin liner

material was ever considered, but the only solution for the use of thin layers provided by D6 was to thicken the layer by adding additional layers.

One of the significant times when problems arise in the use of liners and particularly thin liners as recited in the present invention, is in the cutting of labels. ALS and Loehmann cut the label while it is on the temporary carrier. This is described, for example, in Loehmann as part of the operation shown in Figure 7 on pages 5 and 6 of the reference. It is specifically stated that

“The shape of this interruption in the cutting tool, however, is important from the standpoint of the height of the cutting edge. In individual cases, it may be appropriate to have the interruption in the cutting edge correspond to its height, but in many cases it is advisable for the interruption not to extend to the height of the cutting tool. This is expedient when, for example, the outer contour of the flat form is to be punched completely from a multi-layer strip-shaped material, for example, but is to be punched with only connecting bridges in a layer beneath that.”

The problem is the inability to precisely control the thickness of the cut so that it would pass completely through the label layer (and not leave partial cuts between the bridges), yet not cut the liner layer. With the recited thin liner layer of the invention, the criticality of the cut is increased, as the layer is thinner, any cutting contact would damage a significant portion of the thickness of the liner, and almost any significant contact with the cutter would shift or wrinkle the thin liner. More Importantly, the cutting contact would tear the release liner, causing adhesive to ooze through to the back of the adjacent substrate in a wound up roll. This would cause the materials to stick together, eliminating the possibility of normal label dispensing. Also, the cutting contact against the liners would weaken the release liner to the point where it would break on the label applicator, shutting down the applicator line. Even those skilled in the art have been unable to provide a solution to this problem in the application of thin liner layers. The fact that the claimed technology of this application provides a solution to a problem that has faced the industry for years and enables the use of such ultrathin liners evidences the strong technical advance and inventive step accomplished in this invention.

These are significant problems that are uniquely solved by a) first cutting the label, so that there cannot be any cutting impact on the liner, b) then associating the cut label with the ultrathin liner, and c) then using the combined cut label/ultrathin liner composite in a mechanical applicator. This specific step ordering enables the use of the ultrathin liner, saving costs, reducing volume of waste, and preventing wrinkling that would pose problems during automated label application, and eliminates the possibility of cutting the liner, which would otherwise cause blocking and web breaks on the label. This combination of steps and materials recited in the claims shows that a previously unidentified problem has been solved by a unique combination of steps with those materials.

6. Claims 5, 6 and 10 have been rejected under 35 USC 103 as unpatentable over WO/00/07883 (Advanced Label Systems, ALS), in view of WO 00/30963 (Loehmann), Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621) (as applied directly above) when further considered with Muschelewicz et al.

This rejection is respectfully traversed for the reasons provided directly above and for the additional reasons presented below.

Muschelewicz et al. teaches a novel release sheet and does not provide any teaching specific to the use of precut label stock with microbridging and with ultrathin liner sheet. The liner sheet of this reference is normal liner thickness.

7. Claims 1-4 and 7-19 have been rejected under the Judicially-Created Doctrine of Obviousness-Type Double Patenting over claims 1-3 of U.S. Patent No. 6,294,038. in view of WO/00/07883 (Schumann), Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621).

This rejection is traversed on its merits for the simple reason, as indicated in the responses in paragraphs 5 and 6 above, as the use of precutting of label stock and the use of microbridged label enables a practice of the invention that could not be heretofore successfully practiced in the art, the use of thin liners. There are therefore two distinct differences recited in the claims that are not taught in the prior art. The first is the use of the thin liner material in combination with

linerless label stock, and the second is the use of microbridging formed in the linerless label stock prior to its lamination with the ultrathin liner sheet. It is this unique combination of steps, timing, material and dimensions that provides for the unique benefits of the invention. These unobvious features and the novel effects of a stable cut label on an ultrathin carrier sheet are not obvious in view of the combination of references. This establishes that the invention provides unexpected results and was not obvious to those of ordinary skill in the art at the time of filing the application. However, to simplify the issues, Applicants hereby provide a Terminal Disclaimer with respect to the earlier Patent that is commonly assigned.

8. Claims 5, 6 and 10 have been rejected under the Judicially-Created Doctrine of Obviousness-Type Double Patenting over claims 1-3 of U.S. Patent No. 6,294,038. in view of WO/00/07883 (Schumann), Koehlinger et al. (US 3,920,122) and Boreali (US 5,573,621) when further considered with Muschelewicz et al.

This rejection is traversed on its merits for the simple reason, as indicated in the responses in paragraphs 5 and 6, as the use of microbridged label enables a practice of the invention that could not be heretofore successfully practiced in the art, the use of thin liners. This establishes that the invention provides unexpected results and was not obvious to those of ordinary skill in the art at the time of filing the application. However, to simplify the issues, Applicants hereby provide a Terminal Disclaimer with respect to the earlier Patent that is commonly assigned.

CONCLUSION

The present claims are patentable over the prior art cited in the rejections. All pending claims are allowable. The Examiner is authorized to cancel all non-elected claims upon allowance of claims 1-10 and 18-20 by way of an Examiner's amendment. If there are any issues that the Examiner believes can be addressed by a telephone communication, the Examiner is courteously invited to call the attorney of record at **952.832.9090**

Authorization is hereby given to charge any additional fees or credit any overpayments that may be deemed necessary to Deposit Account Number 50-1391.

Respectfully submitted,
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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this Amendment and the papers, as described herein, are being deposited in the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: MAIL STOP: AMENDMENT; P.O. BOX 1450; Commissioner for Patents, Alexandria, VA 22313-1450 12 January 2004.

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